

**2004 GALVESTON BAY INVASIVE SPECIES RISK ASSESSMENT
INVASIVE SPECIES SUMMARY**

Created by: Environmental Institute of Houston, University of Houston-Clear Lake
and the Houston Advanced Research Center

Common Name: Mexican tetra
Latin Name: <i>Astyanax mexicanus</i>
Category: Aquatic Animal
Place of Origin: “Subtropical America. Mostly eastern and central Mexico and also the lower Rio Grande, lower Pecos, and Nueces rivers in Texas (Lee et al. 1980 et seq.; Page and Burr 1991). Historically, found in the Pecos River drainage and lower Rio Grande in New Mexico, but now restricted to the Pecos drainage downstream of Dexter (Sublette et al. 1990) (http://nas.er.usgs.gov/fishes/accounts/characid/as_mexic.html).”
Place of Introduction: “It was first recorded in open waters, when several juvenile to subadult specimens were taken from the Colorado River just below Morelos Dam in 1966 (Minckley 1973) (http://nas.er.usgs.gov/fishes/accounts/characid/as_mexic.html).” Additional occurrence details described as well.
Date of Introduction: 1966
Life History: “Reddish-orange or yellow anal fins distinguish breeding males. Males also have fine hooklets on the anal fins. Reproduction in these fishes seem to show a lack of any courtship or display. Spawning females sit still in still moving water or in vegetation and male spawning is preceded by a searching period. Ova and sperm are ejected while the pair turn their bodies, which are pressed together, upside down. Eggs become attached to plants or sink to the bottom. Mating males will change if there are more than one male (Wilkins, 1988) (http://www.bio.utexas.edu/courses/bio354l/projects/1998/Chris_Elmore/Astyanax_mexicanus.html).”
Growth/Size: 8-12 cm (http://www.bio.utexas.edu/courses/bio354l/projects/1998/Chris_Elmore/Astyanax_mexicanus.html and http://nas.er.usgs.gov/fishes/accounts/characid/as_mexic.html)
Feeding Habits/Diet: <i>A. fasciatus mexicanus</i> is an omnivorous fish whose large toothy mouth allow it to feed on smaller fish, filamentous algae, plants, mollusks, and other invertebrates. It is a curious fish and has been found to consume bits of cheese with enthusiasm (http://www.bio.utexas.edu/courses/bio354l/projects/1998/Chris_Elmore/Astyanax_mexicanus.html)
Habitat: “ <i>A. fasciatus mexicanus</i> lives in freshwater rivers, springs, wetlands, backwaters, and canals from Argentina to New Mexico. It is because of this that it can tolerate a wide degree of biotic and abiotic environments. It is a schooling fish that tends to occupy swift moving rapids, eddies, and pools (Minkley, 1973). <i>A. mexicanus</i> is found in Cuatro Ciénegas, Mexico where thermal springs heat pools to temperatures in the upper 80’s, but is also found thriving in San Luis Potosí, Mexico where the waters at the birthplace of the Rio Choy get in the lower 60’s. (http://www.bio.utexas.edu/courses/bio354l/projects/1998/Chris_Elmore/Astyanax_mexicanus.html).”
Attitude (aggressive, etc.): “Because it is predacious and highly aggressive, there is concern that this species could impact native fishes by preying on their young (Miller 1952; Minckley 1973) (http://nas.er.usgs.gov/fishes/accounts/characid/as_mexic.html). Degradation of stream habitats resulting from overgrazing, siltation, channelization, and water diversion are probable reasons for the decline of the species in its native habitat (http://www.fw.vt.edu/fishex/nmex_main/species/010555.htm).”
Physical Description: “ <i>A. mexicanus</i> is silvery except for a black lateral stripe of melanophores (Rasquin, 1947) that extends from the caudal base to the center of the caudal fin. The number of melanophores is 30% greater in fish living over a dark rather than a white background (Wilkins, 1988). It’s head is large, laterally compressed, blunt, and without scales. The mouth is terminal, bearing large, sharp teeth. Adults have oblong, strongly compressed bodies reach a maximum standard length of 80 mm. Large cycloid scales cover the body with 35 to 40 in the lateral line (Sublette et. al, 1990) (http://www.bio.utexas.edu/courses/bio354l/projects/1998/Chris_Elmore/Astyanax_mexicanus.html).”
Management Recommendations / Control Strategies: include references for existing site-specific strategies
References (includes journals, agency/university reports, and internet links): 1. http://nas.er.usgs.gov/fishes/accounts/characid/as_mexic.html . USGS Nonindigenous Aquatic Species.

2. http://www.bio.utexas.edu/courses/bio354l/projects/1998/Chris_Elmore/Astyanax_mexicanus.html. Elmore, Christopher R.. 1998. **Student project report. Ichthyology - Z00334C**. University of Texas at Austin. Accessed December 29, 2002.
3. Lee, D. S., C. R. Gilbert, C. H. Hocutt, R. E. Jenkins, D. E. McAllister, and J. R. Stauffer, Jr. 1980 et seq. Atlas of North American freshwater fishes. North Carolina State Museum of Natural History, Raleigh, NC.
4. Page, L. M., and B. M. Burr. 1991. A field guide to freshwater fishes of North America north of Mexico. The Peterson Field Guide Series, volume 42. Houghton Mifflin Company, Boston, MA.
5. Sublette, J. E., M. D. Hatch, and M. Sublette. 1990. The fishes of New Mexico. New Mexico Department of Game and Fish, University of New Mexico Press, Albuquerque, NM. 393 pp.
6. Minckley, W. L. 1973. Fishes of Arizona. Arizona Fish and Game Department. Sims Printing Company, Inc., Phoenix, AZ.
7. Miller, R. R. 1952. Bait fishes of the lower Colorado River, from Lake Mead, Nevada, to Yuma, Arizona, with a key for identification. California Fish and Game 38(1):7-42.
8. Rasquin, P. 1947. Progressive pigmentary regression in fishes associated with cave environments, Zoologica 32:35-42.
9. Wilkins, Horst 1988. Evolution and genetics of *Astyanax fasciatus*. Evolutionary Biology 23:271-367.

Available Mapping Information:

USGS Nonindigenous Aquatic Species. http://nas.er.usgs.gov/fishes/accounts/characid/as_mexic.html

“Lee et al. (1980 et seq.) and Page and Burr (1991) provided distribution maps; these authors considered Mexican tetra populations recorded from the Rio Grande drainage in southern New Mexico, and in the associated nearby border area of Texas, to be introduced. In contrast, Sublette et al. (1990) believed that this area constituted part of the species' natural or historical distribution. It now appears to be extirpated from the Rio Grande in New Mexico and is on the decline in many portions of the Pecos River drainage; as such, the species is classified as "state endangered" by New Mexico (Sublette et al. 1990) (http://nas.er.usgs.gov/fishes/accounts/characid/as_mexic.html).”

Notes: This species is listed as USFS Sensitive: Region 3 (NM,AZ), Mexico: Threatened, and State NM: Threatened (http://www.fw.vt.edu/fishex/nmex_main/species/010555.htm).